

ANALYSIS OF TWO SURVEYS EVALUATING A PROJECT TO REDUCE ACCIDENTAL POISONING AMONG CHILDREN

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AN ESTIMATED 1 million persons, the majority young children, accidentally ingest potentially toxic substances each year.

The Public Health Service, through its National Clearinghouse for Poison Control Centers, provides to more than 550 poison control centers information on the chemistry and toxicity of various household products and medicines, along with recommendations for diagnosis and treatment when these substances are swallowed, inhaled, or absorbed. A review of the clinical reports which the centers provide the Clearinghouse indicate that many of these accidents result from carelessness in the storage, handling, and disposal of toxic and potentially toxic substances. Another contributing factor is adults' apparent lack of awareness about the hazards involved when medicines and household products are not used as intended or directed.

Therefore a demonstration project in poison prevention was designed to investigate methods and techniques to prevent accidental poisonings among preschool children and implemented in Charleston County, S.C.

The cooperating agencies—Public Health Service, South Carolina State Board of Health, and Charleston County Health Department—had indicated that the success of the demonstration project would be measured by significantly reducing poisoning accidents among children under 5 years of age. The baseline for the evaluation would be the average number of patients (excluding those with lead poisoning) hospitalized during 1960–61.

Ideally, the baseline should have been the total number of children who had ingested toxic substances. However, this total was impossible to obtain because, in addition to hospitalized patients, it would have included those treated in the emergency room, children given treatment after telephoned inquiries to the poison control center, unreported patients treated in physicians' private offices and clinics, and children who received no medical attention.

Consequently, we decided to use records of patients under 5 years of age hospitalized 1 or more days for acute accidental poisoning during calendar years 1962 through 1964. According to the National Clearinghouse for Poison Control Centers, the number of such children in Charleston County declined markedly.

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<i>Patients</i>	<i>Year</i>	<i>Percent decline from the baseline</i>
90-----	1960–61 average	
66-----	1962	— 27
69-----	1963	— 23
64-----	1964	— 29

The purpose of this demonstration was to test the hypothesis that a mass, intensive, educational campaign in a specific geographic area over a given period of time can result in reducing accidental poisonings among children.

Communications Techniques

All the communications techniques traditionally used in other motivational programs were used. Methods of communication included programs presented to organized groups (parent-teacher associations and civic clubs); radio and television spot announcements, panel discussions, and interviews; and human interest stories in the press, along with public service and commercially sponsored messages.

For radio spot announcements, the Public Health Service produced an electrically transcribed series of messages on poison prevention. Ten messages from 10 to 60 seconds long repeated essentially the same information used on television and in newspapers.

Do you know your home is full of potential poisons?
Do you know your baby could find them and swallow them?

Do you know a half million babies die each year?

We in the Public Health Service know—but there's very little we can do about it without your help. Put poisonous household products like medicine, drain cleaners, insect spray, sedatives, and kerosene out of your child's reach.

For your child's sake, lock them up . . . today.
Tomorrow might be too late.

Other approaches included the use of posters, window streamers, and banners in grocery stores and pharmacies, counter cards in clinic and physicians' waiting rooms, bus cards and exhibits or displays in public buildings.

Use was made of the group discussion technique on the thesis that talking about a particular problem in a group situation would aid in its solution. We felt that neighbors who see each other frequently and informally may exert an important influence over one another. Using a study by Wehrle and associates (1), which suggested a repetitive pattern of ingestions of potentially toxic substances among children with a history of such ingestions, these discussions were developed among residents in neighborhoods with high incidence of accidental ingestions. Groups, usually limited to 12

women, gathered in a home or some other suitable, convenient meeting place.

Because these meetings were held in high-incidence areas, the group generally included women who had had experience with accidental ingestions in their homes, and frequently they related in detail their personal experiences. Such experiences enabled the women to identify with the problem.

One method developed in the project area and now being used elsewhere is directed to the children and only indirectly to their parents. A guide for teaching poison prevention in kindergarten was developed and subsequently expanded to include the primary grades (2).

Through a series of learning experiences, youngsters are taught from kindergarten through third grade about the hazards of their environment and how to cope with them. These experiences include class interviews on different days with one child's mother, the school nurse, the school physician, a pediatrician, a pharmacist, a grocer, the health officer, or the sanitarian. Excursions were made to the grocery store and the pharmacy. Children participated in games, songs, and plays, all geared to ". . . asking first."

Thus, youngsters, at this formative stage of their development, are taught proper habits for self-protection and the protection of younger brothers and sisters. At the same time, because children in this age group repeat rather completely at home what they have learned in school, parents are influenced to be aware of the problem and provide a safe environment for the family.

Scope of the Study

This paper does not discuss the project in detail; essentially, it is a comparative analysis of two surveys. The first, in 1962, took place only 6 months after the project was inaugurated and before all of the plans were in effect. The second, in 1965, was conducted 6 months after the project's completion. In a sense the surveys are an evaluation of the methods and techniques employed. Moreover, the findings from this survey should remind community workers that educational programs—no matter how well projected—are only as effective as their level of

receipt. This axiom is demonstrated in the discussion of the parents' awareness of their children's mobility and ingenuity relating to potential poisoning hazards.

The same questionnaire was used in both surveys, although the second sample was larger. In 1965, 1,129 interviews were conducted in contrast to 604 in 1962. Only 96 (8.5 percent) of the 1,129 respondents indicated they had been interviewed previously.

Respondents' Sources of Information

In 1962, 82.3 percent of the parents said they had seen or heard something about the danger of children accidentally eating or swallowing things like aspirin, kerosene, lye, or other household products; in 1965, this percentage was 88.4 percent (table 1).

The increase of nearly 100 percent of those indicating radio as their source for poison prevention information may reflect the use of the electrical transcriptions. The transcriptions were played very frequently by Charleston's radio stations.

The increased percentage of parents who said schools were their source of information in 1965 probably reflects the later emphasis on children in kindergarten and the primary grades as one medium for reaching parents. The increase in those mentioning group meetings also may reflect intensified efforts in this approach.

Lack of information from the public health nurse can be explained partly by the little contact that most occupational groups, except service workers and laborers, have with the direct services of the health department. However, nurses often conducted the group meetings, so this lack of identification may be misleading.

The large percentage of parents who said newspapers were their source of information was evidence that this medium of communication should not be underestimated. Newspaper articles about child poisoning were published frequently in Charleston County during the project.

The number of persons who would contact physicians if their child swallowed a toxic substance increased greatly among professional, managerial, and proprietary workers as well as among craftsmen, foremen, and operatives.

The professional groups citing physicians as their source of this advice increased from 9.8 percent in 1962 to 15.9 percent in 1965. A significant increase occurred also among the service workers and laborers who would first contact the emergency room.

The group meeting as a source of information was cited increasingly in 1965 by the craftsmen, foremen, and operatives; clerical and sales workers; and service workers and laborers. Except for the professional, managerial, and proprietary workers who showed an increase from 2.3 percent in 1962 to 10.6 percent in 1965, no significant change occurred from 1962 to

Table 1. Comparison of responses in 1962 and 1965 interview surveys to three questions about child poisoning accidents

Question and response	Percent answering	
	1962	1965
Where did you hear or see the information about accidental poisoning?		
Physician.....	3.9	3.8
Television.....	21.4	18.8
Radio.....	5.8	10.4
Newspaper.....	30.0	27.3
Magazine or book.....	10.0	6.8
Group meeting.....	2.0	7.8
Club program.....	2.8	2.6
School.....	3.7	8.3
Public health nurse.....	.9	2.9
Friend or relative.....	10.2	8.0
Experience.....	6.1	---
Other.....	3.2	3.3
What would you do first if your child swallowed something?		
Call or take child to physician.....	42.1	38.3
Call or take child to hospital emergency room.....	31.5	36.5
Home remedy.....	22.4	23.0
Other.....	4.0	2.2
Where did you learn this? [action after ingestion]		
Physician.....	6.7	8.3
Television.....	6.7	8.6
Radio.....	2.2	5.7
Newspaper.....	6.8	19.0
Magazine or book.....	8.5	7.8
Group meeting.....	1.6	8.0
Club program.....	2.2	2.8
School.....	5.2	9.1
Public health nurse.....	1.0	3.0
Friend or relative.....	8.2	5.6
Previous poisoning incident ²	33.3	5.7
Other.....	17.6	16.4

¹ 5 responses included syrup of ipecac.

² In 1962 this item was listed as "experience." This term may make comparison difficult.

1965 among the categories of persons citing club programs as their source of information.

It may be noteworthy that special effort was made to solicit invitations to present poison prevention programs to civic groups. However, responses in the 1965 survey indicate that accidental poisoning of children occurs among all socioeconomic groups (table 2).

Storage Practices

Several questions pertaining to storage practices elicited more than one response. Apparently in 1965 a larger percentage of families used locked cabinets and drawers for their medicines, and a smaller percentage used open shelves and the tops of furniture (table 3). For storage of cleaning products, use of locked cabinets, open shelves, and tops of furniture decreased and use of utility rooms increased. A decrease was noted also in the use of open shelves and the floor for the storage of petroleum distillates, with an increase in the use of oil drums.

A comparison of the storage practices for medicines, cleaning products, and petroleum distillates in 1965 may indicate the respondents' beliefs about the relative danger of these substances. For example, 9.3 percent of the respondents stored medicines in locked cabinets, yet only 3.9 percent locked cleaning agents, and 5.2 percent locked petroleum distillates. (The programs did not stress locked cabinets for cleaning agents and petroleum distillates to the same degree as for medicines.)

On the other hand, 71.0 percent of the respondents used an unlocked cabinet for their

Table 2. Previous child poisoning incidents reported in 1965 survey

Occupational group	Persons in groups	Previous poisoning incidents	
		Number	Percent
Professional, managerial, and proprietary-----	122	4	3.4
Craftsmen, foremen, and operatives-----	182	16	8.8
Clerical and sales workers-----	148	11	7.4
Service workers and laborers-----	351	25	7.1
Others, unspecified-----	326	25	7.7

medicines, and 28.2 percent stored kerosene in unlocked cabinets. It was not noted whether the outside utility room might be "off limits" to youngsters or where the oil drum was located. These factors could be important because ingestion of kerosene as compared with ingestions of other substances is reported relatively more frequently in Charleston County than in other sections of the country.

In comparing the type of containers for cleaning products with those for kerosene, gasoline, turpentine, and pesticides, 99.3 percent of the respondents said that original containers were used for cleaning products. Of these, only 54.5 percent used the original containers for petroleum distillates; others mentioned soda-pop bottles, cups or drinking glasses, oil drums, or unspecified containers.

Table 3. Comparison of responses in 1962 and 1965 interview surveys to questions about storage of potential poisons, by percent

Storage area	Medicines		Cleaning products		Petroleum distillates	
	1962	1965	1962	1965	1962	1965
Locked cabinets-----	7.1	9.3	7.3	3.9	13.2	5.2
Unlocked cabinets-----	73.8	71.0	61.3	61.5	25.7	28.2
Drawer-----	2.5	8.9	.2	.4	.2	.2
Open shelves-----	8.3	4.7	16.2	9.5	21.2	6.4
Tops of furniture-----	6.0	3.2	4.1	3.3	1.6	1.5
Floor-----			5.6	9.0	12.1	7.0
Oil drums-----					.9	10.0
Utility room-----			3.5	9.1	22.0	20.8
Other, not specified-----	2.3	2.9	1.8	3.3	3.1	20.7

Use of unlocked cabinets to store cleaning products in their original containers was indicated by 61.5 percent of the responses. Of the 359 persons who used unlocked cabinets for storing kerosene and other petroleum distillates, 256 kept these products in their original containers; the remainder stored kerosene in cans or jars, oil drums, or soda-pop bottles in unlocked cabinets.

Outside utility rooms were used as storage areas for kerosene by 267 families. Of these, 176 used original containers; the others used cans, jars, or oil drums. Irrespective of the storage area, 277 of the responses indicated that cans or jars were being used for storing petroleum distillates. It should be noted that kerosene and gasoline—widely used locally for heating, cooking, and cleaning—were purchased from dealers who required the purchaser to provide his own container.

Accessibility of Hazardous Substances

Indication of the parents' awareness of their children's mobility and ingenuity in reaching toxic substances is seen in table 4. Of 867 respondents who said medicines were unseen by and unavailable to their children, 604 (69.7 percent) stored these items in unlocked cabinets; only 94 (10.8 percent) used locked cabinets. Of the 94 persons replying that the medicines could be seen by but were inaccessible to the child, 55 used unlocked cabinets, 21 used open shelves, 10 used the tops of furniture, and 8 used locked cabinets or other unidentified places as storage areas.

When queried about the storage of cleaning products, 762 respondents insisted these were unseen by and inaccessible to the child. Yet 17.1 percent indicated that cleaning products were stored on open shelves, floors, and tops of furniture. The situation regarding kerosene was no different. Open shelves, floors, and tops of furniture were reported as storage areas, yet parents maintained that the materials were not in sight and could not be reached by the child.

In response to the question about changes in storage practices for medications and household products, 164 persons replied that they had instituted such changes, and 85.4 percent of these did so after the project began. In the order of frequency mentioned, aspirin, bleach, lye, medi-

cines other than aspirin, petroleum distillates, pesticides, and turpentine or paint thinner were stored differently.

Sources credited with prompting these changes were newspapers, 15.4 percent; experience with a previous poisoning incident, 14.0 percent; television, 9.3 percent; information from friend or neighbor, 9.3 percent; magazines, 6.5 percent; and physicians, 5.6 percent. Other parents gave equal weight to radio, schools, and club programs followed in descending order by group meetings and the public health nurse.

Conclusion

In assessing the results of this project, there have been some worthwhile discoveries. A concentrated, communitywide program to reduce the incidence and severity of accidental poisoning is feasible and can have a significant effect. In Charleston County, the number of children hospitalized with poisoning has declined.

Several authorities question the effectiveness of mass media in inducing long-term changes in attitude or behavior, so that even though these have been used with some effectiveness in this project, their ultimate significance must be considered within this frame of reference.

The survey demonstrated that lack of awareness on the part of adults still persists. This apparent lack of awareness pertains to the potential hazards of commonly used household products, and also to the mobility, ingenuity, and agility of children as they progress in their several stages of growth and development. It is significant that adult carelessness and lack of awareness, considered the predisposing factors

Table 4. Parents' conception of accessibility of stored items to children, by percent, 1965

Parents' viewpoint	Medicines	Cleaning products	Petroleum distillates
Not in sight, cannot reach-----	74. 2	62. 9	76. 7
In sight, cannot reach-----	8. 1	9. 3	8. 8
Not in sight, can reach-----	13. 0	16. 2	5. 1
In sight, can reach-----	4. 7	11. 6	9. 4

to childhood poisoning accidents, exist at all socioeconomic levels.

These surveys were not designed to evaluate any single technique. Rather, they tested the effectiveness of reaching the target population through various approaches. Many methods different from those described in this paper have been proposed and can be used to educate a population so they will be motivated to take appropriate measures to protect their families.

In our judgment, this project has uncovered a promising long-term approach to the prevention of accidental poisonings among children: directing poison prevention programs to the children concurrently with programs geared to adults.

The significance of the decline in hospitalizations due to poisoning among children cannot

be underestimated. Obviously, communications were not ineffective. Perhaps short-term motivational techniques proved their worth in this project. The results certainly confirm that the messages were received and imply the necessity for maintaining an effective level of communication with which the population can relate and *practically* comply.

REFERENCES

- (1) Wehrle, P. F., DeFreest, L., Penhollow, J., and Harris, V. G.: Epidemiology of accidental poisoning in an urban population. Part 3. *Pediatrics* 27: 614-620, April 1961.
- (2) U.S. Public Health Service: Guide for teaching poison prevention in kindergartens and primary grades. PHS Publication No. 1381. U.S. Government Printing Office, Washington, D.C., 1966.

1966 Birth Rate Drops

According to the National Center for Health Statistics, Public Health Service, births in the United States during 1966 totaled 3,629,000, the smallest number since 1950, while marriages continued to rise, totaling 1,844,000.

Births in 1966 were 131,000 below the final 1965 total. The number of marriages in 1966 was 55,000 higher than in 1965.

The 1966 birth rate of 18.5 births per 1,000 population continued to decline from the most recent peak of 25.3 in 1957 and is the lowest rate in this country since 1936.

The fertility rate in 1966 was 91.8 births per 1,000 women aged 15-44 years. Although the fertility rate also has been declining since 1957, it is well above the rates of 76 to 79 for the years 1933-39.

Today, American women 15-44 years of age comprise only 20 percent of the entire national population; however, in the 1930's women in this age group represented 24 percent of the total population. As a result of the decline in the proportion over the past 25 years, the substantially higher fertility rate of women of today is only large enough to maintain the birth rate of the total population at a level close to that of the 1930's.

Federal Publications

Health Resources Statistics; Health manpower, 1965. *PHS Publication No. 1509; 1966; 182 pages; \$1.25.* Encompasses 140 health professions and occupations, each of which requires that the worker have some special education or training to function in the health field. Identifies more than 300 job titles that apply to the same position or to a special aspect of the work. Gives statistical information on the numbers of health personnel employed and their locations by State, growth in employment since 1950, distribution by types of practice, function, or specialty, trends, in numbers of training programs and graduates since 1950, and the locations of institutions which offer training programs, with the numbers of students and graduates in the 1964-65 academic year. Lists health professions and occupations in each of 35 health fields. Cites sources of information on health manpower statistics in each chapter. The sources are related to education, license to practice, certification or registration, association membership, place of employment, and the decennial censuses. Also summarizes 1960 census findings on professions and occupations of persons employed in the health services industry and more recent data, 1964 or 1965, on the occupational classification of employees in the Public Health Service and other selected Federal agencies, as well as State and local health departments.

Cancer Cause and Prevention. *PHS Publication No. 959; 1966; 16 pages; 20 cents; revised.* Discusses environmental factors, personal factors, occupational hazards, and research approaches. Lists other Public Health Service publications on cancer.

Cancer Questions and Answers About Rates and Risks. *PHS Publication No. 1514; 1966; 21 pages; 20 cents.* Describes cancer as a major cause of death. Discusses age, sex, and urban-rural differences in cancer incidence, the clustering of cancer cases in families, death rates for married and single persons, and

cancer incidence among various socioeconomic groups. Also discusses dietary and occupational factors related to certain forms of cancer. Includes glossary of terms. Prepared for the general public, this booklet is based on a more technical publication, PHS publication No. 1148, "Cancer Rates and Risks."

Comprehensive Care Services in Your Community. *PHS Publication No. 1353; 1966; 54 pages; 25 cents.* Discusses community care service programs that have been developed throughout the country to meet the needs of ill and disabled patients. Stresses community approaches to comprehensive care during long-term illness. Presents descriptions and suggestions for planning services which give individual persons and groups concerned with health care in the community an indication of what is being done and what can be done in the development of community care services.

Influenza. *PHS Publication No. 163 (Health Information Series No. 36); revised 1966; leaflet; 5 cents, \$2.50 per 100.* Describes cause, spread, and symptoms of influenza. Gives general precautions to be observed and recommends routine annual immunization for high-risk groups, specifically the elderly and chronically ill.

Measles. *PHS Publication No. 303 (Health Information Series No. 24); revised 1967; leaflet; 5 cents; \$2 per 100.* Discusses measles (rubeola), as distinguished from German measles (rubella). Covers spread, symptoms, treatment, and prevention, including the use of the new measles vaccines.

Scientific Information Retrieval System for Research Grants. *PHS Publication No. 999-RH-22; October 1966; by J. J. Sabo and S. Wieder; 17 pages.* Presents a report describing a method developed for the Division of Radiological Health Research Grants for use in retrieving scientific

information readily by means of a manual system or an automatic information processing system, or a combination of the two. Gives specific examples of coding and searching with special attention to needs related to program and discipline areas, as well as to scientific content. The principles of the method are applicable or adaptable to other programs in which scientific information retrieval is required. The system described is based on the special experiences of the Division of Radiological Health Research Grants staff and applies to the problems characteristic of its operations.

Laboratory Section of the Packaged Disaster Hospital. *PHS Publication No. 1071-F-4; 1966; 49 pages; 60 cents.* Covers setting up and operation of the laboratory of the Packaged Disaster Hospital including organization and staffing patterns. Discusses detailed laboratory methods, based on available PDH supplies and equipment, for performing selected tests for urinalysis, blood typing and grouping, hematology, blood chemistry, and bacteriology. Appendices show an inventory of equipment and supplies that will be delivered to the laboratory section upon establishment of the PDH and a list of those things that must be requisitioned from other sections. Includes instructions for use and care of the microscope and names of other publications concerning the PDH.

This section carries announcements of new publications prepared by the Public Health Service and of selected publications prepared with Federal support.

Unless otherwise indicated, publications for which prices are quoted are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Orders should be accompanied by cash, check, or money order and should fully identify the publication. Public Health Service publications which do not carry price quotations, as well as single sample copies of those for which prices are shown, can be obtained without charge from the Public Inquiries Branch, Public Health Service, Washington, D.C. 20201.

The Public Health Service does not supply publications other than its own.



REINIG, EDWARD (County of Los Angeles Health Department), and **HEIDBREDER, GERALD A.**: *Breakthrough in VD education in Los Angeles County: 200 schools with VD instruction. Public Health Reports, Vol. 82, June 1967, pp. 505-512.*

A resurgence in venereal disease rates in Los Angeles County pointed to the need for an educational effort that would strongly influence young adults. Since the staff of the county health department believed that working with small groups would have little impact, an approach through the schools was initiated with a sustained teacher education program in mind.

Initially, in 1962, a pilot program of VD education was instituted in a limited number of schools within the Los Angeles City School District. Then, in July 1963, after the Public Health Service funded a 3-year project for a VD education and information program in Los Angeles County, an intensive effort was made to stimulate public awareness of the need and to introduce subject matter concerning venereal disease con-

trol into all school districts. Teacher training courses were provided.

Answers on questionnaires distributed annually at a teenage fair served as a means of evaluation of the project. These questionnaires revealed that a great majority of Los Angeles County teenagers now have a fairly comprehensive knowledge of syphilis and gonorrhea.

A venereal disease education program is currently operated in 200 of Los Angeles County's junior and senior high schools, and there is evidence that the remaining schools will institute such programs.

HAYMAN, CHARLES R. (District of Columbia Department of Public Health), **LEWIS, FRANCES R.**, **STEWART, WILLIAM F.**, and **GRANT, MURRAY**: *A public health program for sexually assaulted females. Public Health Reports, Vol. 82, June 1967, pp. 497-504.*

Women and girls are being sexually assaulted in large numbers and with increasing frequency, especially in large cities. Comprehensive health services for these often tragically neglected victims are needed in every community. Many health departments serving areas which had the highest rates for sexual assault in 1964 have indicated that they have no program to provide the needed emergency care and followup assistance.

In September 1965 the District of Columbia Department of Public Health, which provides almost all emergency treatment for victims,

initiated followup by public health nurses to determine if sexually assaulted females need psychiatric or further medical assistance.

During the first 9 months of the program, 322 women and girls were seen and questioned by the police department, given an initial medical examination, and referred to the nursing bureau. Their ages ranged from 2 to 88 years; 24 percent were under 13 and 53 percent were under 17. Only 13 percent were white. The sexual incidents varied from forcible "gang" rape by strangers to incest with the father to imagined assault.

Fourteen patients suffered severe trauma requiring emergency treatment, and four of these also required hospitalization. As a result of the assault, one 15-year-old became pregnant, one 4-year-old became infected with syphilis, and 13 other patients contracted gonorrhea. Thirteen patients became emotionally disturbed, and one of these attempted suicide.

A total of 290 patients accepted the public health nurse followup service, and they were referred to various facilities and private physicians for psychiatric and medical evaluation and treatment. As of August 15, 1966, 73 percent of the appointments were kept.

Still being followed by the nurses are 157 patients who need medical or psychiatric followup or who are being processed by the police or both.

GOLDBERG, IRVING D. (Public Health Service), **GOLDSTEIN, HYMAN**, **QUADE, DANA**, and **ROGOT, EUGENE**: *Association of perinatal factors with blindness in children. Public Health Reports, Vol. 82, June 1967, pp. 519-531.*

A retrospective study of 553 legally blind children of single birth, born in New York State during a 12-year period, was conducted to investigate the association of perinatal factors and birth weight with the occurrence of blindness. A stratified systematic sample of the recorded single live births in the State over the same period provided expected values for comparison with the study group. Perinatal information was obtained from the birth certificates and their accompanying medical supplements,

and information on the study children's blindness was obtained from the New York State Commission for the Blind.

The results of the study showed that the study group was characterized by low birth weight. A somewhat higher proportion than expected of mothers of the study children were nonwhite, and also a higher than expected proportion were at the extremes of the maternal age span at delivery (under 20 or 35 years and older). More mothers

than expected were primiparae. For upstate New York, the mothers of the study children were characterized by a higher than expected frequency of prior stillbirths. The proportion of mothers of the study children with one or more complications of pregnancy was twice the expected, and this was due principally to a significant excess of preeclampsia among these mothers. With regard to type of blinding affection, congenital cataract was the most notable affection associated with low birth weight. Supplementary information indicated that the proportion of blind children who were of twin birth was appreciably higher than the usual incidence of twins among live births.

STRONG, ANN B. (Public Health Service), PORTER, CHARLES R., CARTER, MELVIN W., and WILSON, EDWARD F.: *Localization of fallout in United States from May 1966 Chinese nuclear test. Study based on milk sampling. Public Health Reports, Vol. 82, June 1967, pp. 487-495.*

The Chinese nuclear detonation of May 9, 1966, provided fresh fission products, which were deposited in the United States during the week of May 15-21. An examination of milk data from both the Pasteurized Milk Network of the Public Health Service and from the pasteurized milk networks of the individual States revealed that the heaviest concentra-

tion of fallout was in the State of Arkansas; lesser amounts were measured in a number of surrounding States. This localization in the Arkansas area is believed to have been caused by the heavy rainfall in the Mississippi Valley during the time the cloud of radioactivity was passing over the United States.

An expanded milk sampling pro-

gram was established in Arkansas with the collection of daily samples from a Lonoke County dairy farm near Little Rock. A maximum value of 570 picocuries of iodine 131 per liter was detected at the Lonoke collection station, while the highest value recorded in the United States was 920 picocuries per liter at Fort Smith, Ark.

Disappearance half-times for the fresh fission products in milk were determined to be 4.1 days for iodine 131, 4.6 days for barium 140, and 4.9 days for strontium 89.

PUGH, THOMAS F. (Massachusetts Department of Mental Health), and MacMAHON, BRIAN: *Measurement of discontinuity of psychiatric inpatient care, Public Health Reports, Vol. 82, June 1967, pp. 533-538.*

Rates of discontinuity of inpatient care are presented for 7,982 patients new to Massachusetts mental hospitals. During a 3-year followup, 11.9 percent of the patients had a second mental hospital experience in a hospital other than the first, 4.8 percent

by transfer and 7.1 percent not by transfer. Administrative practices of the State hospitals appeared to account for almost half of the rate of transfer.

Among 1,880 patients who had two separate hospitalizations (transfers

having been excluded), 30.1 percent had their second hospitalization in a different hospital. The change from private to public mental hospitals uniformly exceeded that from public to private. This differential was especially marked for patients with schizophrenia and those with senile and cerebral arteriosclerotic brain syndromes.

PRICE, JAMES, Jr. (Pennsylvania Department of Health), and CARTER, H. R., Jr.: *An outbreak of gastroenteritis caused by Salmonella indiana. Public Health Reports, Vol. 82, June 1967, pp. 551-554.*

Salmonella indiana was isolated over a period of 1 year from 11 unrelated patients of one practicing pediatrician. The source remained unknown until a nurse submitted for bacteriological study a sample of cup cheese which was suspected of having caused intestinal disease in her immediate family. *S. indiana* was

isolated from this sample and from stool specimens from five members of the family, three of whom had ingested the dairy product. Investigation revealed that 10 of the pediatrician's patients had eaten cup cheese. All cup cheese was manufactured at the same plant and was unpasteurized. The only other cup

cheese manufacturer in the area, who received raw material from the same dairy but whose product was pasteurized, was not implicated in this episode.

Stools of the employees at the supplying dairy farm were culture negative for *Salmonella*. This was also true of the water supply. However, *S. indiana* was isolated from the water supply of an adjacent farm, although the sample had a most probable number coliform count of less than 2.2 per 100 ml. of water.

MAISEL, GEORG (Public Health Service), LANGDOC, BETTYE A., JENKINS, MARGARET Q., and AYCOCK, E. KENNETH: *Analysis of two surveys evaluating a project to reduce accidental poisoning among children. Public Health Reports, Vol. 82, June 1967, pp. 555-560.*

The Public Health Service, South Carolina State Board of Health, and Charleston County Health Department from 1962 through 1964 conducted a demonstration project in preventing accidental poisonings among young children. A new technique, directing concurrent programs to children and adults, was used with traditional methods for alerting the population to the hazards of accidental poisoning from medicines, cleaning products, and petroleum

distillates.

Data from two surveys, one comprised of 604 interviews in 1962 and the other of 1,129 interviews in 1965, showed that accidental poisoning of children occurred among all occupational groups. The percentage of parents who said radio was their source of information about the peril increased from 5.8 in 1962 to 10.4 in 1965, and the percentage of those citing schools as their source of information rose from 3.7 to 8.3.

Knowledge of the first step to take in such an emergency was obtained from newspapers by 19 percent of the parents in 1965 but only 6.8 percent in 1962. Of the 164 persons who reported changing their storage habits, 85.4 percent did so after the project began. The number of children hospitalized as a result of poisoning from 1962 to 1965 decreased by nearly 30 percent.

Results of the second survey indicated that some parents remain unaware of the potential hazards of common household products and underestimate the ability of children to reach hazardous substances.